

I Claim:

1. A system for selectively restricting the radio frequency transmission of a cellular telephone within a defined restricted-communication area, comprising:

a transmitter for generating a control signal at an entrance to the restricted-communication area, said transmitter having a broadcast area not being coextensive with the restricted-communication area;

the cellular telephone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier;

a receiver subsystem within the cellular phone responsive to said control signal, for generating a restricted-communication signal upon receipt of said control signal and for a predetermined time thereafter; and

a transmitter-inhibited subsystem responsive to said restricted-communication signal that inhibits said radio-frequency carrier transmission within the restricted-communication area.

2. A system as defined in claim 1 wherein said control signal is ultrasonic

3. A system as defined in claim 2 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said

microphone for receiving said ultrasonic control system.

4. A system as defined by claim 1 wherein said control signal is infrared.

5. A system as defined by claim 1 wherein said control signal is a radio frequency signal.

6. A system for selectively restricting the radio frequency transmission of a cellular telephone within a defined restricted-communication area, comprising:

a first transmitter for generating a first control signal at an entrance to a restricted-communication area, said first transmitter having a broadcast area not being coextensive with the restricted-communication area, and said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

a second transmitter for generating a second control signal at an exit from a restricted-communication area, said second transmitter having a broadcast area not being coextensive with the restricted-communication area, and said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

the cellular phone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier;

a receiver subsystem within the cellular phone

responsive to said control signals, for generating a restricted-communication signal upon receipt of said first control signal until receipt of said second control signal; and

a transmitter-inhibit subsystem, responsive to said restricted-communication signal, that can inhibit said radio-frequency carrier transmission within the restricted-communication zone.

7. A system as defined in claim 6 in which said control signal is ultrasonic.

8. A system as defined in claim 7 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

9. A system as defined in claim 6 wherein said control signal is infrared.

10. A system as defined in claim 6 wherein said control signal is a radio frequency signal.

11. A system for selectively restricting the radio frequency transmission of a cellular telephone within a defined restricted-communication zone, comprising:

a plurality of transmitters for repetitively generating a control signal within the restricted-communication area, said control signal being different from the electromagnetic signal

conveying said cellular telephone audio signal;

a synchronization subsystem whereby at least one said control signal transmitters are prevented from transmitting while another said control signal transmitter transmits its control signal, each said control transmitter transmitting its control signal repetitively within a maximum time interval between said transmissions;

the cellular phone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier;

a receiver subsystem within the cellular phone responsive to said control signal, for generating a restricted-communication signal upon receipt of said control signal and for a time longer than the longest time between any said control signal transmitters' sending consecutive signals; and

a transmitter-inhibit subsystem responsive to said restricted-communication signal that can inhibit said radio-frequency carrier transmission within the restricted-communication area.

12. A system as defined by claim 11 wherein said synchronization subsystem uses common 60 Hz household power to establish which of said transmitters send their control signal during each half of the 60 Hz cycle.

13. A system as defined by claim 11 wherein said control signal is ultrasonic.

14. A system as defined in claim 13 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

15. A system as defined by claim 11 wherein said control signal is infrared.

16. A system as defined by claim 11 wherein said control signal is a radio frequency signal.

17. A cellular telephone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier, wherein said radio frequency transmission is inhibited upon receipt of a control signal generated at the entrance to a defined restricted-communication area, said cellular telephone comprising:

a receiver subsystem within the cellular phone responsive to said control signal, for generating a restricted-communications signal upon receipt of said control signal, and for a predetermined time thereafter; and

a transmitter-inhibit system responsive to said restricted-communication signal that inhibits said radio-frequency carrier transmission within the restricted-communication area.

18. A cellular telephone as defined in claim 17 wherein said control signal is ultrasonic.

19. A cellular telephone as defined in claim 18 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

20. A cellular telephone as defined in claim 17 wherein said control signal is infrared.

21. A cellular telephone as defined by claim 17 wherein said control signal is a radio frequency signal.

22. A cellular telephone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier, wherein said radio frequency transmission is inhibited upon receipt of a first control signal generated from a first control signal transmitter at an entrance to a defined restricted-communication area, and re-enabled upon receipt of a second control signal generated from a second control signal transmitter at an exit from said defined restricted-communication area, said cellular telephone comprising:

a receiver subsystem within the cellular phone responsive to both said control signals, for generating a restricted-communication signal upon receipt of said first control signal until receipt of said second control signal; and

a transmitter-inhibit subsystem responsive to said restricted-communication signal that can inhibit said radio-frequency carrier transmission within the restricted-

communication area.

23. A cellular telephone as defined in claim 22 wherein said control signal is ultrasonic.

24. A cellular telephone as defined in claim 23 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

25. A cellular telephone as defined in claim 22 wherein said control signal is infrared.

26. A cellular telephone as defined in claim 22 wherein said control signal is a radio frequency signal.

27. A cellular telephone including a subsystem for transmitting a cellular telephone audio signal on a radio-frequency carrier, wherein said radio frequency transmission is inhibited upon receipt of a control signal generated from any of a plurality of control signal transmitters within a defined restricted-communication area, in which a synchronization subsystem coupled to said transmitters causes at least one said control signal transmitter to avoid transmitting while another said control signal transmitter transmits its control signal, each said control transmitter transmitting its control signal repetitively with a maximum time interval between said transmissions, said cellular telephone comprising:

a receiver subsystem within the cellular phone responsive to said control signal, for generating a restricted-communication signal upon receipt of said control signal and for a time thereafter greater than said maximum time interval; and

a transmitter-inhibit subsystem responsive to said restricted-communication signal that can inhibit, for a predetermined time, said radio-frequency carrier transmission within the restricted-communication area.

28. A cellular telephone as defined in claim 27 wherein said control signal is ultrasonic.

29. A cellular telephone as defined in claim 28 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

30. A cellular telephone as defined in claim 27 wherein said control signal is infrared.

31. A cellular telephone as defined in claim 27 wherein said control signal is a radio frequency.

32. A method for selectively restricting the emission of a radio frequency signal from a cellular telephone within a defined restricted-communication area, comprising of the steps of:

generating a control signal at an entrance to said restricted-communication area said control signal not being



coextensive with said restricted-communication area, and said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

generating a restricted-communication signal within the cellular phone upon receipt of said control signal, and for a predetermined time thereafter; and

applying the restricted-communication signal to the radio frequency transmitter to inhibit its emission within the restricted-communication zone.

33. A method as defined in claim 32 wherein said control signal is ultrasonic.

34. A method as defined in claim 33 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

35. A method as defined in claim 32 wherein said control signal is infrared.

36. A method as defined in claim 32 wherein said control signal is a radio frequency signal.

37. A method for selectively restricting the emission of a radio frequency signal from a cellular telephone within a defined restricted-communication area, using a first control signal transmitter at an entrance to said area and using a second

control signal transmitter at an exit to said area comprising the steps of:

generating a first control signal at an entrance to said restricted-communication area, said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

generating a second control signal at an exit from said restricted-communication area, said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

generating a restricted-communication signal within the cellular phone upon receipt of said first control signal, until receipt of said second control signal; and

applying the restricted-communication signal to the radio frequency transmitter to inhibit transmission within the restricted-communication zone.

38. A method as defined in claim 37 wherein said control signal is ultrasonic.

39. A method as defined by claim 38 wherein the cellular telephone includes a microphone responsive to the voice of the user, said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

40. A method as defined in claim 37 wherein said control signal is ultrasonic.

41. A method as defined in claim 37 wherein said control signal is a radio frequency signal.

42. A method for selectively restricting the emission of a radio frequency signal from a cellular telephone within a defined restricted-communication area using a plurality of control signal transmitters which are coupled to a synchronization mechanism, comprising the steps of:

generating synchronization signals to enable said control signal transmitters, such that each said transmitter is enabled to send the control signal within a maximum time interval after it sent the previous control signal;

generating, from each enabled control signal transmitter, a control signal within the defined restricted-communication zone, said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

generating a restricted-communication signal within the cellular phone upon receipt of said control signal, and for a predetermined time thereafter that is larger than said maximum time interval; and

applying the restricted-communication signal to the transmitter to prevent transmission of the radio frequency signal within the restricted-communication zone.

43. A method as defined in claim 42 wherein said synchronization signals uses common 60 Hz household power to

establish which of said transmitters send their control signal during each half of the 60 Hz cycle.

44. A method as defined in claim 42 wherein said control signal is ultrasonic.

45. A method as defined in claim 44 wherein said cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control system.

46. A method as defined in claim 42 wherein said control signal is infrared.

47. A method as defined in claim 42 wherein said control signal is a radio frequency signal.

48. A system for selectively restricting the ringing operation of a cellular telephone within a defined quiet zone, comprising:

a plurality of transmitters for repetitively generating a control signal within the quiet zone, said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

a synchronization subsystem whereby at least one said control signal transmitter is prevented from transmitting while at least one other said control signal transmitter transmits its control signal, each said control transmitter transmitting its

control signal repetitively within a maximum time interval between said transmissions;

the cellular telephone including a ringer circuit subsystem for audibly signaling the receipt of a call;

a receiver within the cellular phone responsive to said control signal for generating a muting signal upon receipt of said control signal and for a time thereafter longer than the longest time between any said control signal transmitter's repetition rate; and

a muting circuit subsystem responsive to said muting signal for inhibiting the operation of said ringer circuit subsystem, to inhibit ringing of the telephone said cellular phone within the quiet zone.

49. A system as defined in claim 48 wherein said synchronization subsystem uses common 60 Hz household power to establish which of said transmitters send their control signal during each half of the 60 Hz cycle.

50. A system as defined in claim 48 wherein said control signal is ultrasonic.

51. A system as defined in claim 50 wherein the cellular telephone includes a microphone responsive to the voice of the user and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

52. A system as defined in claim 48 wherein said control signal is infrared.

53. A system as defined in claim 48 wherein said control signal is a radio frequency signal.

54. A cellular telephone wherein its ringing is inhibited upon receipt of a control signal generated from any of a plurality of control signal transmitters within a defined quiet zone, in which a synchronization subsystem coupled to said transmitters causes at least one said control signal transmitter to avoid transmitting while at least one other said control signal transmitter transmits its control signal, each said control transmitter transmitting its control signal repetitively with a maximum time interval between said transmissions, said cellular telephone comprising:

a ringing circuit for audibly signaling the receipt of a call;

a receiver responsive to the control signal for generating an internal muting signal upon receipt of the control signal and for a period of time thereafter longer than said maximum time interval; and

a muting circuit responsive to said muting signal for inhibiting the operation of said ringing circuit, with receipt of said control signal to inhibit ringing of the telephone in the quiet zone.

55. A cellular telephone as defined in claim 54 wherein said synchronization subsystem uses common 60 Hz cycle.

56. A cellular telephone as defined in claim 54 wherein said control signal is ultrasonic.

57. A cellular telephone as defined in claim 56 wherein the cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

58. A cellular telephone as defined in claim 54 wherein said control signal is infrared.

59. A cellular telephone as defined in claim 54 wherein said control signal is a radio frequency signal.

60. A method for selectively restricting the operation of the ringer of a cellular telephone within a defined quiet zone using a plurality of control signal transmitters, comprising the steps of:

generating synchronization signals to enable said control signal transmitters, such that each said enable is generated within a maximum time interval after it was last sent;

generating, from each enabled control signal transmitter, a control signal within the defined quiet zone, said control signal being different from the electromagnetic signal conveying said cellular telephone audio signal;

generating a muting signal within the cellular phone upon receipt of said control signal and for a time thereafter longer than said maximum time interval; and

applying the muting signal to the ringer circuit to inhibit operation concurrently with the receipt of the control signal to prevent ringing of the telephone within the quiet zone.

61. A method as defined in claim 60 wherein said synchronization signals uses common 60 Hz household power to establish which of said transmitters send their control signal during each half of the 60 Hz Cycle.

62. A method as defined by claim 60 wherein said control signal is ultrasonic.

63. A method as defined in claim 62 wherein said cellular telephone includes a microphone responsive to the voice of the user, and said control signal receiver microphone responsive to the voice of the user, and said control signal receiver subsystem utilizes said microphone for receiving said ultrasonic control signal.

64. A method as defined by claim 60 wherein said control signal is infrared.

65. A method as defined by claim 60 wherein said control signal is a radio frequency signal.